



# cross talk

June 1975 NEWS BULLETIN OF TRW AMATEUR RADIO CLUB



Sponsored by Systems Employee Association



WAC  
WAS  
DXCC  
FD'71  
FD'73

TRW/ARC Saturday Morning Nets 10AM LT

Primary	7.280 MHz
Secondary	3.980 MHz
Novice	7.140 MHz
Simplex*	147.510 MHz

\*Any.....time!!!!!!

# CQ CQ .....

## FIELD DAY CONTEST

THORNLEY E

R6 2591

### FIELD DAY INFORMATION ISSUE

QST...QST...QST...join with TRW/ARC's 1975 Field Day Activity on June 28 & 29.

Activities will begin on the San Pedro Navy Fuel Depot Site at approximately 0900 Saturday Morning.

TRW/ARC will be operating Class 6A under the call of W6TRW, with a Novice station call of WN6HEU. On-the-air operations will begin at 12 noon local time, and run continuously for 24 hours.

1975 JUNE 1975						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Mark your calendar, now!!!!

### FIELD DAY SITE AT NAVY FUEL DEPOT, SAN PEDRO, CALIFORNIA

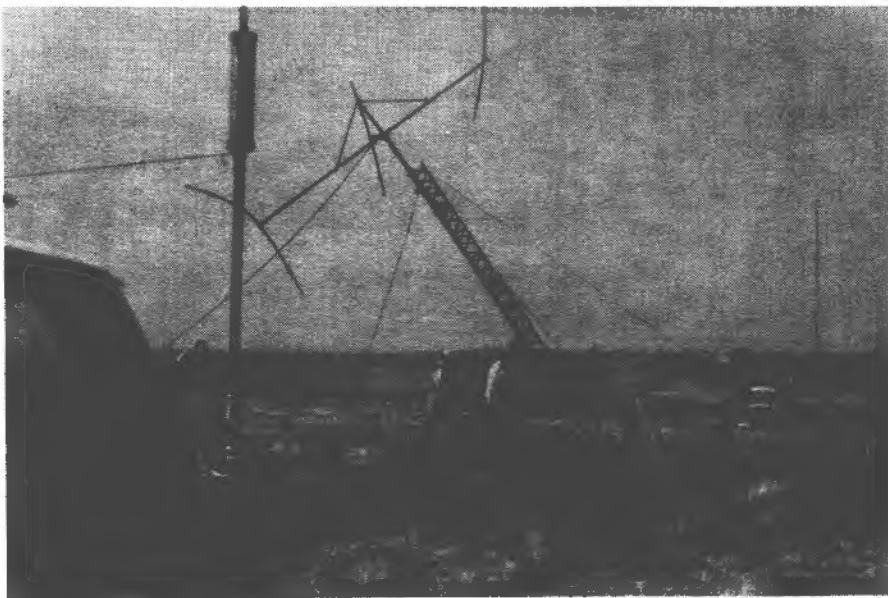


PHOTO BY W6KQI

\*\*\* MEETING REMINDER \*\*\* R2-1055  
Always the last Wednesday at noon  
Subject: Slide Visit to: W6AM & TRW/ARC SwapMeet '75.  
Speaker: Dave Gilmore, WB6IDJ

## The \$140 Two Meter Walkie-Talkie

by WB6JIZ

Wanting a portable 2 Meter rig without many of the compromises of the usual HT, the author has undertaken the assembly of a home-brew rig with a number of advantages over the present commercial units. The major concern was to have portable operation without "burning down" the batteries in a couple of hours. This project resulted in an IC22A size package which is about 40% battery.

A Gel-Cell 12 volt battery with a 4.5 amp-hour rating was selected as being optimum for round-the-clock talk power. For those individuals not familiar with the latest battery technology, a Gel-Cell is a sealed lead-acid type device using a gellied acid which allows using the battery in any position. The power to weight ratio is the same as for NiCad's, and it suffers none of the cell reversal or "memory" problems. Also price-wise, the Gel-Cell is less expensive, my unit costing 21.60 new from Radio Products. That's \$4.80 per amp-hr at 12V (compare that with about \$25 per amp-hr for a set of AA size NiCad's).

As for the rest of the guts housed in the homebrew ruggedized aluminum case, both the transmitter and receiver were built from the VHF Engineering kits. The receiver has a 2 pole 10.7 MHz IF crystal filter and dual conversion. Sensitivity for the receiver is .25 uV for 20 db quieting, with transmitter output power of 1.5 watts.

The VHF Engineering kits go together quite easily, although not up to the Heathkit assembly standards....you are given a pile of parts, a component layout, and "best wishes"!! Seriously though, they are well engineered units, and both kits tuned-up perfectly with a minimum of equipment and effort.

A big improvement in the usual "tinny" audio quality was achieved by using a 4" x 6" auto speaker. This gives true FM quality to the audio with plenty of punch for those noisy outside situations, e.g., Field Day!

The total investment for this project is about \$140, including the battery and one set of crystals, which is not bad for a portable base station.

Presently under construction is a one transistor power amp to boost the power out to 10 watts, using a 2N5590 (\$5.80) and an outboard strap-on synthesizer of the GLB type which should be completed for under \$75.....now if I could just figure out a way to get my 11 element beam in my attache case.....!

73's,

John Pettingell  
WB6JIZ



The author with 2 Meter Portable



Interior view (Gel-Cell at rear, Xmtr board is located above the four receiver boards).

TRW Systems Amateur Radio Club  
Field Day Information  
Bulletin

1. TRW/ARC will again participate in the ARRL National Field Day Contest.  
If you have not signed up for this annual event, either contact a member of the Field Day Committee....or if all else fails, just come on out to the San Pedro Navy Fuel Depot Saturday and/or Sunday. Someone will be on 147.51 MHz to "talk you in" (also see map, page 2).
2. The TRW/ARC Field Day Committee is listed below:

OPERATING TEAMS

			<u>Phone</u>
80 SSB	Ted Carter	WA6PAS	536-2006
80 CW	Dave Carson	WB6BGO	535-3176
40 SSB	Ollie Saunders	W6OIC	535-3971
40 CW	Bob Hume	WB6AQF	535-3262
20 SSB	Herb Gleed	W6FQ	536-2507
20 CW	Doug Heydon	WB6WDS	535-0413
15 SSB	Fred Reed	W6UMC	261-7951 (home)
15 CW	Dave Carson	WB6BGO	535-3176
VHF (6M, 2 AM, 2 FM)	Stan Johnson	W6EKK	535-3460
Novice	Dave Buker	WN6HEU	542-3831 (home)
Satellite	Ed Arm	WA3FVG	-
Natural Power	Ollie Saunders	W6OIC	535-3971
Field Day Manager	Paul Weiss	K8YQ	536-2882
" " Deputy	Bill Dewe	K8AWO	535-1994

FD SUPPORT STAFF

POWER	Frank Halligan	536-1266
FOOD	Lu Cartier	
PUBLICITY	Joel Winsman	535-2275
PHOTOGRAPHY	Dave Gilmore	535-3380
SEA LIASON (Insurance)	Ferd Newhoffer	536-1832
NAVY LIASON (Site)	Weisz/Heydon	
SANITATION (the John)	Weisz/Dewe	
LOGS	Ed Thornley	535-0743
DATA PROCESSING	Jerry Dean	536-1612

FIELD DAY INFORMATION (Cont'd)

3. Entrance to the site is on Gaffey Street, near the police pistol range. It will be necessary to announce your destination and purpose at the gate in order to gain admittance. Follow the "TRW/ARC" sign to the upper level of the site. Someone will be on 147.51 MHz to talk you in.
4. Equipment setup will begin at 0900 local time, with 24 hours of on the air operations scheduled to begin at 1200 noon (but this time is flexible). All electrical power will be cut 24 hours later, and after Sunday lunch for all, teardown will begin so that all hands can return by mid-afternoon.
5. All meals are being coordinated by the Food Chairperson. In order to reduce expenses this year, all are asked to cooperate in providing the requested food items. Meals and beverages will be provided for all active participants in TRW/ARC's Field Day.
6. If you are planning to spend the night, bring your own sleeping facilities. Bring extra chairs for shade areas, we'll need all we can find!
7. There is a heavy growth of dry grass at and around the operating site. Fire precautions are very important (see next page). Boots or high shoes are recommended if available.
8. The club will be operating with our station call of W6TRW. The novice station this year will be under the call of Associate Member WN6HEU. The club station call is licensed with Advanced Class privileges, and must be operated within those privileges except as provided for by FCC Regs for EXTRA Class operators (e.g., de W6TRW/6 with W6FQ). In any case, you must operate within the band limits of your own operator's license.
9. FCC regs require that you have your license in your possession while you are operating: BRING IT!!!
10. Official ARRL Field Day rules are in this package, read and understand them!
11. All contacts will be logged on club log sheets, which will be provided. The log sheets will be the record of the essential elements of each contact, and basic data on operation of the station (see example in this package).

A fresh log sheet should be started each hour, on the hour (thus providing an easy means of tallying our contacts, as compared to prior years). Be advised that any log sheet from which the above data cannot be deciphered will be discarded, and its contacts not counted in our score. Remember your contacted stations must be keypunched in order for the computer to process our results!!
12. Dupe sheets will be provided for each operating band. The logger or operator should enter the call sign of each station worked in the appropriate column, so that the sheet can be scanned to see if a calling station has been worked before. Remember, duplicate stations contacted are worth ZERO points!!
13. A tentative schedule for stations operation is attached. We are competing this year in Class 6A, operating up to six rigs simultaneously, with a power input not to exceed 200 watts.
14. We plan to have a satellite terminal in operation at the site for extra points. And also some transmitter operation utilizing "natural power".
15. During a Field Day contact/exchange, give a signal report and our Los Angeles section, in return record the other station's call, his report to you, and ARRL section.
16. If you have any questions.....ask!!

## FIRE PRECAUTIONS

THIS FIELD DAY SITE IS SITUATED IN A FLAT AREA COVERED WITH DRY GRASS TO A DEPTH OF NEARLY TWELVE INCHES. THIS, PLUS THE FACT THAT WE WILL BE IN A PETROLEUM STORAGE DEPOT, DICTATES CERTAIN ELEMENTARY PRECAUTIONS:

- EACH STATION SHALL BE EQUIPPED WITH AT LEAST TWO PLASTIC FIRE BUCKETS WHICH WILL BE KEPT FULL OF WATER.
- SMOKING WILL NOT BE PERMITTED AT THE FIELD DAY SITE (IN THE STATION SHELTERS OR IN GRASSY AREAS), EXCEPT AT THE PAVED TURN-AROUND NEAR THE HEADQUARTERS FACILITY. THIS PROHIBITION IS IMPOSED BY THE NAVY IN THE INTERESTS OF THEIR AND OUR SAFETY, AND IT IS EXPECTED THAT WE WILL ALL OBSERVE IT.
- THE USUAL GOOD HOUSEKEEPING RULES DICTATED BY COURTESY TO OUR HOSTS ARE EVEN MORE IMPORTANT. KEEP FLAMMABLE TRASH UNDER CONTROL.
- BE CONSCIOUS OF THE FIRE HAZARD. AND ACT PROMPTLY IF THE NEED ARISES.

6/12/75

TRW/ARC W6TRW/6 FIELD DAY 1975 OPERATIONS PLAN

BAND	→	80	80	40	40	20	20	15	15	VHF	Nov
POST HR ENDING		SSB	CW	SSB	CW	SSB	CW	SSB	CW	A B	
1 PM	1300										
2	1400										
3	1500										
4	1600										
5	1700										
6	1800										
7	1900										
8	2000										
9	2100										
10	2200										
11	2300										
12 MID	0000										
1 AM	0100										
2	0200										
3	0300										
4	0400										
5	0500										
6	0600										
7	0700										
8	0800										
9	0900										
10	1000										
11	1100										
12 Noon	1200										

NOTES:

- THIS PLAN IS FOR CLASS 6 ENTRY
- VHF(A) WILL SHARE TIME WITH 15 SSB IF BOTH ARE PRODUCTIVE; IF ONE IS NOT PRODUCTIVE OTHER WILL GO FULL TIME; IF WEATHER IS, GO SSB.
- IF NECESSARY, ADJUSTMENTS TO PLAN WILL BE MADE ON SITE, BY FD. HGR.
- NOTE THAT ONE CW CONTACT IS WORTH 2 SSB CONTACTS IN SCORING.

MOORE'S: [144]  
BAND %: [100]



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Date 6/22/74  
Band 20 M  
Mode SSB

W6TRW/6

xmtr SWAN  
revr SAME  
ant DIPOLE  
pwr input 200 WDC  
(unless otherwise noted)

Note: Start new log sheet each hour

[illegible]

# Rules for the ARRL Field Day

Annual Test for Emergency-Powered Stations, June 28-29

**BY THE TIME** you read these lines you will have less than two months to prepare for what should be one of the biggest activities on your club calendar — FD. Read the rules thoroughly and send for the contest forms. These forms include a summary sheet and duplicate sheets (Op. Aid 6). FD logs are not available, nor have they been for a number of years. The submission of a contest log is not required this year as in the past. Although the FCC no longer requires that full logs be kept, it is highly advantageous to do so since 1) a log extract may be requested by Hq. for log checking purposes and 2) a full record of your club's past performance is helpful when planning for next year. Please read rule 13 carefully.

There is only one rule change this year. As explained in rule 10, each cw QSO will now count 2 points and each phone QSO will be worth 1 point. The Contest Advisory Committee recommended that this change be instituted for the 1975 Field Day on a trial basis, to be adopted permanently if the change appears to be serving its intended purpose of increasing cw activity during Field Day. This change will undoubtedly modify band/mode setups for many groups so thought should be given now to the course of action your club might take. The Oscar rules have been moved from the lead material to rule 11f.

The schedule of Oscar 6-7 FD passes is available on request. Ask for the info. with your FD forms request or separately via an s.a.s.e.

Entries must be postmarked no later than August 1, 1975. GL — WAIPID.

## Rules

1) **Eligibility:** The Field Day is open competitively to all amateurs in the ARRL Field Organization (plus Yukon and N.W.T.). Foreign stations may be contacted for credit but are not eligible to compete.

2) **Object:** For portable and mobile stations, to work as many stations as possible. For home stations, to work as many portable and mobile stations as possible.

3) **Conditions of Entry:** Each entrant agrees to be bound by the intent as well as the provisions of these rules, the regulations of his licensing authority and the decisions of the ARRL Awards Committee.

4) **Entry Classifications:** Entries will be classified according to the number of transmitted signals simultaneously on the air at any one time during the FD period, followed by the designation of the nature of the individual or group participation. Once a transmitter makes a contact on a band, it must remain on that band for at least 15 minutes. During this 15 minute period, the trans-

mitter is considered to be transmitting a signal, whether it is or not, for purposes of determining transmitter class. Class A: Club group (or non-club group with three or more licensed amateurs) set up specifically for operation in the FD and using portable identification. Such stations must be located in places which are not regular station locations and must use no equipment or facilities installed for permanent station use, not any structures installed permanently for FD use. Stations must be operated under one call (except when a Novice position is used, as provided by miscellaneous rule (c) and under control of a single licensee or trustee for each entry. All equipment (including antennas) must lie within a circle whose diameter must not exceed 1000 feet. All contacts must be made with transmitter(s) and receiver(s) operating from a power source independent of commercial mains. Entrants who, for any reason, operate a transmitter or receiver from commercial mains for one or more contacts, will be listed at the end of their class. Class B: Non-club stations set up and operated by not more than two licensed amateurs. Other provisions same as for Class A. Class C: Stations located in vehicles capable of operation while in motion and normally operated in this manner, including antenna. Class C stations may operate stationary, but no stationary equipment or facilities may be used. A Class C station may not be used as a station in any other class. The operator of a Class C station may also operate from another station during the FD period, but scores for his mobile operations must be submitted separately. Class D: Stations operating from permanent or licensed station locations, not portable or mobile, using commercial power. Class E: As above, but using emergency power for transmitters and receivers.

5) **Field Day Period:** FD operation starts at 1800 GMT the fourth Saturday of June and lasts until 2100 GMT the following Sunday, a period of 27 hours. Class A and Class B entries who do not begin any setting-up operations until 1800 GMT on Saturday may operate the entire duration of the FD period. Others may operate no more than 24 consecutive hours, i.e., once FD operation has started it must cease 24 hours from that point.

6) **Bands:** Each phone and each cw segment is considered as a separate band. All voice contacts are equivalent and RTTY is counted as cw. A station may be worked once on each band. Cross-band contacts are not allowed. The use of more than one transmitter at the same time in a single band is prohibited, except that a Novice position may operate on any Novice band segment at any time. Contacts made by retransmitting either or both stations do not count for scoring purposes.

7) **Exchanges:** Stations in the U.S., possessions and Canada must exchange ARRL section (see page 6 in any QST) and signal report. Valid contacts with stations outside of a section consist



## ARRL Rules (cont'd)

of sending a signal report and section and receiving a signal report and country from the foreign station.

8) **Valid Contacts:** A valid contact is defined as a two-way exchange (see above) between stations. Class A, B or C stations may contact any station. Class D or E stations may contact any Class A, B or C station.

### 9) Miscellaneous Rules:

a. Operators participating in the FD may not, from any other station, contact for point credit the FD portable station of a group with which they participated. This is intended to outlaw any kind of manufactured contacts.

b. A station used to contact one or more FD stations may not subsequently be used under any other call during the FD period. This rule is intended to outlaw multiple contacts on the same band with the same station, using different calls. It is not, however, intended to prohibit the use of jointly-owned stations which are normally used under different calls by members of the same family.

c. Any Class A group whose entry classification is three or more non-novice transmitters may also use one Novice operating position (to be set up and operated only by Novice class licensees) without changing their basic entry classification. The Novice position must use a Novice call sign and must keep their own logs and check sheets. The Novice position QSO total may be added to the group QSO total before multiplying.

10) **Scoring:** Scores are based on the number of valid contact points times the multiplier corresponding to the highest power used at any time during the FD period, plus bonus points. Phone contacts count one point each, and cw contacts count two points each. Power multipliers. If all contacts are made using a dc input power of 10 watts or less AND if a power source other than commercial mains or motor-driven generator is used (e.g., batteries, solar cells, water-driven generators, etc.), multiply by 5. If any or all contacts are made using a dc input power of 200 watts or less, multiply by 2. Multiply by 1 if any or all contacts are made using a dc input power over 200 watts and up to 1000 watts. Over 1000 watts multiply by ZERO! Dc power on SSB phone is considered to be half the peak envelope power. Batteries may be charged while in use for Class C entries only. For other classes, batteries charged during the FD period must be charged from a power source independent of the commercial mains.

11) **Bonuses:** The following bonus points may be added to the score (after the multiplier is applied) to determine the final score. Only Class A and B stations are eligible for bonuses. Do not add bonuses to your final score - all applicable bonuses will be added at headquarters.

a. 100 points for 100% emergency power, per transmitter classification. ALL equipment and facilities at the FD site must be operated from a source independent of the commercial mains.

b. If one or more contacts are made using equipment that is totally powered by a source of energy that is derived from "natural" power such as wind, solar or water power, the FD group will get a 100 point bonus. Oil, coal, natural gas, nuclear fuels or any other fossil fuels or their derivatives are not allowed. The energy source must be described. Commercial electric mains or batteries may not be used for this bonus.

c. 50 points for public relations. Publicity must be obtained or a bona fide attempt to obtain publicity must be made. Evidence must be submit-

ted in the form of a clipping, a memo from a BC/TV station stating publicity was given or a copy of material sent to news media for publicity purposes.

d. 50 points for message origination. A message must be originated by the club president or other FD leader, addressed to the SCM or SEC, stating the club name (or non-club group), number of operators, field location and number of AREC members participating. The message must be transmitted during the FD period and a fully serviced copy of it must be included with the FD report. The message must be in standard ARRL message form as explained in *Operating an Amateur Radio Station*. The message must be correct in all respects or no credit will be given.

e. 5 points for each message received and relayed during the FD period, up to a maximum of 50 points. Copies of each message, properly serviced, must be included with the Field Day report.

f. 50 points can be earned by completing at least one cw QSO via the Oscar satellite during the FD period. The repeater provision of rule 6 is waived for Oscar QSOs as is the 15-minute provision of rule 4. An Oscar station does not count as an additional transmitter. On the summary sheet show Oscar as a separate "band."

12) **Club Aggregate Mobile Score:** Entries under Class C may be combined to form an aggregate score for their club, having no connection with the club's portable entry, if any. Individual reports must include the club name. The club secretary or other designated club official must submit the club aggregate mobile score claim. Only bona fide members of a club operating in the club territory (175 mile radius from the club headquarters address) may contribute to this aggregate mobile score.

13) **Reporting:** Entries must be postmarked no later than August 1. The proper summary sheet, plus a list of stations worked on each band and appropriate proof(s) for bonuses constitute an entry. An entry that does not include a check sheet or any other list of QSOs made will be classified as a check log. A copy of your FD log is not required unless specifically later requested by ARRL. This does not, of course, relieve you of the responsibility of keeping a log as required by FCC/DOC. Send a stamped addressed envelope to ARRL Hq. for FD forms which include a summary sheet and a sample of a suggested check sheet.

14) **Disqualifications:** If the claimed score of a participant is reduced by 2 percent or more, the log may be disqualified. Score reduction does not include correction of arithmetic errors.

Score reductions may be made for taking credit for unconfirmed QSOs and/or multipliers, duplicate contacts, banned countries, and/or other scoring discrepancies.

If a participant is disqualified, he will be barred from submitting an entry in the next annual running of that specific contest. (e.g., disqualification from the 1974 phone SS prohibits submission of an entry for the 1975 phone SS, but 1975 cw SS participation is okay).

The calls of all disqualified participants will be listed in the QST report of the contest.

Any participant on the borderline of disqualification but not actually disqualified may receive a warning letter from the Communications Manager.

For each duplicate contact that is removed from the log by Hq., a penalty of 3 additional contacts will be exacted. The penalty will not, however, be considered as part of the 2% disqualification criteria.

QST

**For Sale:** Complete ham station, Swan, PS, tower, etc., \$1200.  
Call Richard for more details, 324-1227.